at Løvenlund and at Crown on St. Thomas, the regions around Cruz Bay, Coral Bay (Debt, Bordeaux, Caroline etc.) and America Hill on St. Jan and near Jolly Hill (Mount Stewart Gut, Cresquis- and Caledonia-valley) on St. Croix.

As in my studies in the Danish West Indies I had, as before said, other objects, I dare not at all think my collections of fungi complete. I hope only that the result of my gatherings, together with the before named, earlier published findings, will form the beginning of a complete Danish West Indian Fungi Flora.

I.

Phycomyceteae, Ustilagineae, Uredineae, Discomyceteae, Pyrenomyceteae et Fungi imperfecti

by

C. Ferdinandsen and **Ø. Winge.**

(With Plate I—II.)

The fungi of these groups, hitherto known from The Danish West Indies, are represented by very few species. E. Fries enumerates in Novae Symbolae Mycologicae 24 species from D. W. I., among which only one, *Xylaria Poitei* Fr., belongs to the groups here examined.

In F. Børgesen og O. Paulsen: Om Vegetat. paa de Dansk-Vestind. Øer, Bot. Tidsskr., 22. Bd., Kbhvn., (French edition: La végétation des Antilles Danoises, Rev. Gén. de Bot., 1900) Rostrup gives a list of fungi, comprising 31 species, among which 20 Autobasidiomycetes; the groups examined by us (vide supra) are also represented by only 11 species: *Coniothyrium melasporum* (Berk.) Sacc., *C. Palmarum* Cda., *Daldinia concentrica** (Bolt.) de Not., *Dichomera Saubinetii* (Mont.) Cke., *Erysiphe communis** Fr., *Hypocrea rufa** (Pers.) Fr., *Hypoxylon coccineum* Bull., *Lisea australis* Speg., *Schroeteria Cissi* (D. C.) De Toni, *Uromyces Asclepiadis* Cke., *U. Sidae* Thüm.

In Millspaugh: Flora of The Island of St. Croix, Field Co-

* The species marked with * are also to be found in Raunkiær's collection: *Hypocrea rufa* occurs in our list as *Trichoderma lignorum* Harz, and *Daldinia concentrica* Ces. et De Not. is surely identic with our *D. Eschscholzii* Rehm.

lumbian Museum, Publ. 68, 1902, Ellis and Kelsey have listed 20 species of fungi, whereof 18 belong to the groups examined in our treatise: *Aecidiella Triumphettae** E. et Kels., *Albugo Tragopogonis** (Pers.) S. T. Gray, *Asterina Colubrinae* E. et Kels., *Coleosporium Ipomaeae* (Sch.) Bur., *Guignardia sp.*, *Hypospila cordiana* E. et Kels., *Phyllachora graminis** (Pers.) Fckl., *Physalospora sp.*, *Puccinia Convolvuli* (Pers.) Cast., *P. heterospora** B. et C., *P. Menthae* Pers., *P. opulenta** Speg., *P. Spermacocis* B. et C., *P. Vernoniae* (Cke.) Grev., *Schroeteria Cissi* (D. C.) De Toni, *Uredo commelinacea** E. et Kels., *U. Gouanae* E. et Kels., *Uromyces Howei* Pk.

Further Saccardo reports several fungi, especially great Pyrenomycetes, as collected in "India occidentalis" by Danish inquirers (Krebs, Ørsted a. o.). Hence however it does not follow, that the records in question belong to The Danish West Indies, because the named collectors have travelled over many other islands of the Antilles.

The number of species determined by us comes to 75, and thus the sum total of fungi, not belonging to Basidiomyceteae and Myxomyceteae, which are hitherto known from The Danish West Indies, amounts to 95 species.

The system and the synonymy used in our treatise agree with those of Saccardo.

Phycomyceteae.

Albugo Ipomaeae-panduranae (Schw.) Swingle.

Syn.: *Æcidium Ipomaeae panduranae* Schw.
Caeoma convolvulatum Lk.
Uredo Convolvulae Spreng.
Æcidium Ipomaeae Schw.
Cystopus Convolvulacearum Otth.
Cystopus Convolvulacearum Speg.
Cystopus Ipomaeae panduranae (Schw.) St. et Sw.

The conidium-layers are *Caeoma*-like, big, often curved, and break forth through a lengthy fissure of the epidermis. These layers occur mostly on the underside of the leaves and are united in groups of until

* The species marked with * also occur in our list under the following names: *Pucciniosira Triumphettae* Lgh., *Albugo Ipomaeae-panduranae* (Schw.) Sw., *Phyllachora graminis* (Pers.) Fckl., *Puccinia heterospora* B. et C., *P. Ipomaeae-panduranae* (Schw.) Syd., *P. Commelinae* Holw.

2 cm. diam., which are often forming conspicuous convexities in the hypophyll with corresponding concavities in the epiphyll.

As the above list of synonyms[1]) indicates, this fungus has been described several times as a rust-fungus, and its habitus comes also very near to that of a *Caeoma*. Undoubtedly also Cooke has understood these *Albugo*-conidia as the aecidiospores to his *Puccinia Ipomaeae* (Saccardo: Syll. Fung. VII, p. 671). Hence it must be considered as objectionable, when H. et P. Sydow in Monograph. Ured. I Puccinia p. 324 state *P. Ipomaeae* Cke. (sensu autoris) as synonymous with *P. Ipomaeae-panduranae* Syd. in spite of the heterogeneity of the first named species.

If the uredineal element in *P. Ipomaeae* Cke. has really its place under the species *P. Ipomaeae panduranae* (Schw.) Syd., as stated by H. et P. Sydow l. c., the Cookean species will thus turn out to be composed of two elements: *Albugo Ipomaeae panduranae* (Schw.) Sw. and *Puccinia Ipomaeae panduranae* (Schw.) Syd.

On leaves of *Ipomaea pes caprae*.

St. Croix: Sandy Point 16. 1. 06 (nr 1806), 26. 1. 06 (nr. 3107).

St. Jan: Riff Bay 8. 3. 06 (nr. 1804); loc. unknown: (nr. 2614).

Ustilagineae.

Ustilago Fimbristylis Thüm. Bull. Torr. Bot. Club., Jan. 1876. — On *Fimbristylis diphylla*.

St. Thomas: Crown Nov. 1905 (nr. 3122).

Ustilago Maydis (D. C.) Cda. Icon. V p. 3. — In a corncob of *Zea Mays*.

St. Croix: Jolly Hill 16. 1. 06 (nr. 1839).

Uredineae.

Aecidium Cissi Wint. Hedw. 1884 p. 168. — On *Cissus sicyoides*.

St. Croix: Caledonia Valley 2. 2. 06 (nr. 1807); Jolly Hill 30. 12. 05 (nr. 1816).

St. Thomas: Crown 7. 12. 05 (nr. 1820 b); Løvenlund Nov. 05 (nr. 1820 a), Dec. 05 (nr. 1828), 14. 12. 05 (nr. 1833), (nr. 2191).

Coleosporium Sonchi (Pers.) Lév. Ann. Scienc. Nat. 1887 p. 373. — Uredo on leaves of *Elephantopus mollis*.

St. Croix: Jolly Hill 20. 1. 07 (nr. 1788, nr. 1794).

Puccinia appendiculata Wint. Flora 1884 p. 262.

H. et P. Sydow: Monographia Ured. I Puccinia p. 244 contains a detailed description of this species, and it is here especially pointed out

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[1]) In Wilson: North American Peronosporales pg. 68 (Bullet. Torrey Bot. Club Febr. 1907).

that the teleutospores vary rather much in size according to the host-plants. In our specimens the teleutospores are very small, as the length of the spores is 37 μ max., while the breadth (which of the *Tecoma stans*-forms is said to be 26—32 μ) is hardly more than 25 μ.

After the description (H. et P. Sydow l. c.) the uredo appears as small point-shaped heaps sitting on yellowish spots that do not come out strongly. Our specimens do not quite answer to this, as the uredo-sori, though (as it seems in an early stage of development) partly being of the above described appearance, will often show quite another and a very characteristic aspect. Partly they appear in big heaps on sharply marked yellow spots, and partly they are found on the mainridge and the side-ridges of the leaf which on centimeter-long stretches are deformed into (in dry state) wood-hard swellings that are often irregularly crooked and outwardly covered with a thin layer of cinnamon-coloured spores.

This pathological appearance puts in mind Spegazzinis description of the *Tecoma stans*-leaves affected by *Uredo Lilloi* Speg. Fung. Arg. nov. v. crit. p. 234 ("Tumoribus majusculis . . . in sicco sublignosis . . . extus cortice proligero tenui ferrugineo vestitis").

Also microscopically our uredo and *Uredo Lilloi* Speg. agree exactly, on account of which we are allowed to presume that this one represents a special rich development of the uredo-stage belonging to *Puccinia appendiculata* Wint. Hence the supposition that *Uredo Lilloi* Speg. represents the unknown uredo-stage of *Puccinia elegans* Schroet. (H. et P. Sydow l. c. p. 245) surely will turn out not to be right.

On leaves of *Tecoma stans*.

St. Croix: Hamsbay 27. 12. 05 (nr. 3072); Northside 27. 12. 05 (nr. 1824); Jan. 06 (nr. 1795, nr. 1827).

Puccinia Arechavaletae Speg. Fung. Arg. Pug. IV p. 22. — On *Cardiospermum microcarpum*.

St. Croix: Jolly Hill 4. 1. 06 (nr. 1821, nr. 3087).

Puccinia Blechi Lgh. Bull. Soc. Myc. de France, 1895 p. 214. — On *Blechum Brownii*.

St. Thomas: Løvenlund 5. 5. 06 (nr. 1809), 10. 5. 06 (nr. 1813, nr. 3070).

Puccinia Commelinae Holw. Ann. Myc. 1904. — Uredo on *Commelina sp.*

St. Thomas: Løvenlund. Dec. 05 (nr. 1802).

Paccinia Emiliae P. Henn. Hedw. 1898. — On *Emilia sagittifolia*.

St. Croix: Jolly Hill 26. 12. 05 (nr. 3063). — On *Emilia sonchifolia*.

St. Croix: Jolly Hill 26. 12. 95 (nr. 1823), 25. 1. 06 (nr. 1791), Jan. 06 (nr. 1826).

Puccinia heterospora Berk. et Curt. Journ. Linn. Soc. X p. 356. — On *Sida supina* and (nr. 1673) *Sida sp.*

Mesospores are very numerous, two-celled spores most often of the Diorchidium-typus.

St. Croix: Jolly Hill 30. 12. 05 (nr. 1673).

St. Jan: America Hill 21. 3. 06 (nr. 1837).

St. Thomas: Løvenlund 16. 12. 05 (nr. 1825).

Puccinia insueta Wint. Hedw. 1887. — Uredo (Syn.: U. crassetunicata Wint.) on a *Malpighiacea* (*Stigmatophyllum periplocifolium?*).

St. Croix: Jolly Hill 4. 1. 06 (nr. 1822, nr. 3086).

Puccinia Ipomaeae panduranae (Schw.) Syd. in H. et P. Sydow: Monograph. Ured. I Puccinia p. 323.

Under *Albugo Ipomaeae panduranae* (Schw.) Sw. — vide supra — we have already had occasion to mention this species and to make some remarks on it. The specimens examined are collected upon *Ipomaea triloba*, *Ip. sp.* and *Quamoclit coccinea* and contain nothing but aecidia. On *Ipomaea* these agree perfectly with the description by H. et P. Sydow l. c., while the form on *Quamoclit* has less developed nearly plate-shaped pseudoperidia and more pulverulent contents. The species-identity of the two forms however is doubtless, as rather typical aecidia sometimes occur also on *Quamoclit* and as the microscopic characters agree exactly in the two forms.

On *Ipomaea triloba.*

St. Croix: Sandy Point 8. 1. 06 (nr. 1817).

On *Ipomaea sp.*

St. Thomas: Løvenlund 7. 12. 05 (nr. 1830).

On *Quamoclit coccinea.*

St. Croix: Jolly Hill 25. 12. 05 (nr. 1799), 2. 1. 06 (nr. 1803); Oxford 30. 12. 05 (nr. 1798); 1906 (nr. 1796).

St. Thomas: Løvenlund Dec. 05 (nr. 1801).

Puccinia leonotidicola P. Henn. Bot. Ergebn. der Kunene-Sambesi-Exped. 1902.

With the uredo-stage of the above-named African species our Leonotis-uredo agrees as well macro- as microscopically and is surely identical with it. Teleutospores (which according to Hennings are very scarce on the African specimens) were not to be found.

On *Leonotis nepetifolia.*

St. Jan: Cruz Bay 17. 2. 06 (without number).

St. Thomas: Løvenlund 14. 12. 05 (nr. 1834), 6. 5. 06 (nr. 1810), 11. 5. 06 (nr. 1805), 17. 5. 06 (nr. 3077).

Puccinia macropoda Speg. Fung. Arg. pug. II nr. 34. — Uredo (Syn.: U. striolata Speg.) on *Iresine elatior.*

Teleutospores unripe. The characteristic uredo-spores differ somewhat from the form on *Iresine celosioides* described by Spegazzini. Especially the deviation from the globose-ovoid form is sometimes rather great. (Oblong spore-individuals of until 40 $\mu \times$ 16 μ are to be found). The striation of the membrane is often very steep (cfr. "transversim conferte ruguloso-striatulo") sometimes parallel with the longitudinal axis of the spore. The spots narrow purple-edged.

St. Croix: Caledonia Valley 2. 2. 06 (nr. 1793).

St. Jan: Cruz Bay 12. 2. 06 (nr. 1808).

St. Thomas: Løvenlund May 06 (nr. 1831).

Puccinia Raunkiærii Ferd. et Wge. sp. n. Pl. I, fig. 1.

Æcidiis caules petiolosque incolentibus, dense gregariis, distorsiones tumoresque sæpe valde elongatas efficientibus, cupulatis; pseudoperidiis albidis, margine subintegro. — Æcidiosporis subglobosis, ellipsoideis, obovoideis, sæpe angulatis, omnino irregularibus, subtiliter verruculosis, cinnamomeis, sub vitro aurantiacis, 22—36 (nonnullis usque 50) $\mu \times$ 16—25 μ, granuloso-farctis.

Uredosporis teleutosoris intermixtis, subglobosis, ellipsoïdeis vel obovoïdeis, plerumque 26—31 $\mu \times$ 21—26 μ, brunneo-flavis, aculeis validis, deciduis, hyalinis obsessis. — Teleutosoris phyllogenis, maculas pallido-flavas 1—2 mm diam. hypophyllas formantibus, amphigenis, plerisque epiphyllis, in greges orbiculares circulariter aggregatis confluentibusque, castaneo-brunneis. Teleutosporis ellipsoideis, utrinque rotundatis, apice vix incrassatis, medio non vel vix constrictis, crassetunicatis, brunneis, 32—40 $\mu \times$ 22—26 μ (raro oblongo-obovoideis 45—50 μ long.), pedicello hyalino, flexili, superne circ. 6 μ crass., deorsum attenuato, usque 55 μ longo præditis.

Species haec *Æcidium Rivinae* B. et C. complectitur.

In caulibus, petiolis foliisque *Rivinae humilis* in insula St. Thomas Indiae occidentalis (leg. Raunkiær).

This autoecic species here described is the first Puccinia known on a plant of the family of the Phytolaccaceae. The aecidia formerly described by Berkeley and Cooke (*Aecidium Rivinae*, Fungi of Cuba nr. 606) produce considerable deformities (hypertrophies and torsions) of the stems and the petioles, and on the limbs are found numerous uredo- and teleutosori of the fungus. Sori are always applied on the overside of the leaf while the corresponding parts of the underside appear as light yellowish spots. As a rule a circle of lengthened sori appears round a bigger roundish middle-sorus, the whole complex soon forming one confluent mass. Later some sori may also appear in the light spot on the underside of the leaf

though here never reaching such rich development as that of the sori on the overside. The teleutospores often have an oblique insertion of the pedicel, in extreme cases vertical septum. Monstrous, clavate, 3—4-locular spores are to be found here and there among the normal ones.

St. Thomas: Løvenlund 10. 5. 06 (nr. 1819, nr. 3066), Dec. 05 (nr. 1832).

Puccinia Synedrellae P. Henn. Hedw. 1898 p. 277. — On *Synedrella nodiflora.*

St. Croix: Jolly Hill 31. 12. 05 (nr. 1818).

St. Thomas: Løvenlund 7. 12. 05 (nr. 1829), 10. 5. 06 (nr. 1814).

Puccinia Urbaniana P. Henn. Hedw. 1898 p. 278. — On *Stachytarpheta sp.*

With this species the Stachytarpheta-Puccinia examined will have to be identified. The macroscopical aspect is very characteristic and agreeing with that of the description of the said species (H. et P. Sydow: Monogr. Ured. I Puccinia p. 310). Microscopically our specimens differ by having still more varying sporeforms than has *P. Urbaniana* (vide H. et P. Sydow l. c. tab. XXI). From the nearly globose less frequent mesospores, transitions to very lengthened forms of spores are to be found, which almost until apex are hardly broader than the pedicel. The thickening of the membrane (as a rule uniform all over the whole cell) is often very conspicuous until $^1/_4$ of the diameter of the cell.

St. Thomas: Crown 9. 5. 06 (nr. 1811).

Pucciniosira Triumphettae Lgh. Berichte D. B. G. 1891 p. 344. — (Syn.: ? *Coleosporium pallidulum* Speg.). — On living leaves of *Triumphetta sp.*

The teleutospores are chained, hyaline and enclosed in pseudoperidia as a rule appearing on the overside of the leaf as small yellowish papillæ that are sometimes hornshaped lengthened.

St. Croix: Jolly Hill 25. 12. 05 (nr. 1800), 23. 1. 06 (nr. 1792), (nr. 3081); Oxford 30. 12. 05 (nr. 1797); 1906 (nr. 1790).

St. Thomas: Nov. 05 (nr. 1835).

Uromyces Euphorbiae Cke. et Peck. 30 Rep. p. 90. — Teleutospores on *Euphorbia prostrata.*

St. Croix; Kings Hill 3. 2. 06 (nr. 1845).

Discomyceteae.

Ascophanus carneus (Pers.) Boud. Ascob. p. 60. — On dunkey-dung with *Sporormia intermedia* Auersw.

St. Thomas: Løvenlund 17. 12. 05 (nr. 3102).

Ciboria (?) sp.

Old specimens on branches. Ascomata brown, stalky, 2—3 mm. broad St. Thomas: Crown 1. 12. 05 (nr. 3110).

Lachnea scutellata (L.). Suec. pag. 458. — On *Musa*.

St. Croix: Jolly Hill 28. 12. 05 (nr. 3099).

Trichopeziza episphaeria (Mart.) Lamb. Myc. Belg. II p. 524. — On *Hypoxylon rubiginosum* Fr.

On the stromata we found some small specimens of a *Trichopeziza* (syn.: *Dasyscypha* or *Lachnum*) having quite the microscopical appearance of the named species. In the description of this no microscopical characters are given, owing to which it is an open question whether the species belongs to *Dasyscypha* (what most likely is the case) or perhaps to *Lachnum*. The material examined does not allow us to settle the question as only the spores were well preserved; these are elliptic-oblong — oblong-fusiform, 4—5 μ $\asymp$ about 2 μ, hyaline.

St. Jan: America Hill 17. 3. 06 (nr. 1735).

Pyrenomyceteae.

Perisporiaceae.

Asterina Coccolobae Ferd. et Wge. sp. n. Pl. 1, fig. 2.

Maculis nullis. Peritheciis in greges orbiculares, 1—2 mm. diam., dispositis, epiphyllis, atris, applanato-scutatis, structura distincte radiata, margine crenulato-fimbriato, ambitu irregulariter ellipticis vel subrotundatis, circ. 175—350 μ diam., hyphis brunneis, septatis, saepe anastomosantibus, $4\frac{1}{2}$—$6\frac{1}{2}$ μ crass., hyphopodia semiglobosa 9—12 μ $\times$ 6—8 μ gerentibus, cinctis. Ascis late ellipsoideis ovoideisve, nonnumquam subglobosis, sessilibus, 38—50 μ $\times$ 25—37 μ. Sporidiis octonis, conglobatis, cylindraceo-oblongis, utrinque subtruncatis vel late rotundatis, crasse tunicatis, 1-septatis, ad septum constrictis, 20—25 μ $\times$ 8—11 μ, juvenilibus flavidulis, maturis brunneis.

Ad folium vivum *Coccolobae uviferae* in insula St. Croix Indiae occidentalis. (Leg. Raunkiær).

St. Croix: Sandy Point 8. 1. 06 (nr. 3111).

Asterina coriacella Speg. F. Puigg. nr. 348. — On living leaves of *Cestrum*.

St. Jan: Makumbi 20. 3. 06 (nr. 1771); (nr. 2802).

Capnodium sp.

On leaves of *Mangifera indica* that were black from the velvet-like covering of *Fumago vagans*, we succeeded in seeing perithecia in sure connexion with the *Fumago*-mycelium. As these perithecia were unripe we were not able to determine the species; however it is doubtless that

they belong to the genus *Capnodium*, and not unlikely they belong to *Capnodium salicinum* Mont. The spores were still hyaline, elliptic-oblong.
St. Thomas: Løvenlund Dec. 05 (nr. 1768).

Erysiphe communis (Wallr.) Fr. Summ. veg. Scand. p. 406. — On *Sida sp.*
St. Croix: Jolly Hill. 30. 12. 05 (nr. 1673).
St. Jan: Cruz Bay 12. 2. 06 (nr. 1677).

Meliola asterinoides Wint. Hedw. 1886 p. 96. — Spores somewhat larger than those of the type. On leaves of *Piper peltatum*.
St. Thomas: Crown Novbr. 05 (nr. 2183).

Hypocreaceae.

Nectria (Lepidonectria) grammicospora Ferd. et Wge. sp. n. Pl. I, fig. 3.

Peritheciis stromate pulvinato, usque 4 mm. diam., primo immersis, dein erumpentibus, confertis, basi modo insculptis, facile secedentibus, ellipsoideis-subglobosis, 300—350 $\mu \times$ 200—250 μ, textura carnosulo-membranacea, pallide ochraceis, oculo nudo — præsertim basi — albido-furfuraceis, papilla minutissima nuda instructis. Vestimento sub vitro e cellulis subrotundatis, 10—15 μ diam., hyalinis, laxe junctis, hinc inde in squamulas quasi acervatis, composito. Ascis juvenilibus fasciculatis, sursum truncatis, subsessilibus, maturis valde elongatis, indeque pedicellatis, clavatis vel oblongo-ellipsoideis, p. sp. 35—60 μ (sec. elongationem $\pm$ provexam et ordinem sporarum) $\times$ $8^1/_2$—10 μ. Sporis octonis, distichis vel inferne monostichis, oblongo-ellipsoideis, utrinque rotundatis, nonnullis subinaequilateralibus, ad septum non constrictis, maturis distincte longitrorsum striatulis, 12—14 $\mu \times$ 5 μ, singulatim hyalinis, gregatim brunneolo-translucidis. — St. conidiifero *Dendrochium sp.* sistente.

Ad ramum corticatum in insula St. Thomas Indiae occidentalis. (Leg. Raunkiær).

St. Thomas: 1905 (nr. 3103).

Nectria (Lasionectria) setosa Ferd. et Wge. sp. n. Pl., I fig. 4.

Peritheciis superficialibus, discretis vel perpaucis gregariis, initio globosis, dein applanatis siccisque pezizoideo-collapsis, $^1/_4$—$^1/_2$ mm. diam., colore carneo vel aurantiaco, setis sparsis, concoloribus, rigidis, coremiiformibus, inferne crassis, sursum leniter attenuatis varieque fimbriato-divisis (conidiophoris?), usque 100 μ long. — praesertim parte inferiori — obsessis. Ascis juvenilibus lanceolato-subfusoideis, maturis cylindraceo-clavatis, 50—70 μ (p. sporif.) $\times$ 8—$10^1/_2$ μ, in pedicellum tenuem, mox secedentem, usque 20 μ long. leniter attenuatis. Sporidiis octonis, superne

subdistichis, inferne plerumque monostichis, oblongo-ellipsoideis, utrinque rotundatis, ad septum non vel vix constrictis, $12—14^1/_2 \mu \times 5—6 \mu$ hyalinis.

Ad vaginas siccas putridasque Musae (?) sp. in insula St. Thomas Indiae occidentalis. (Leg. Raunkiær).

St. Jan: West End 14. 2. 06 (nr. 3095).

St. Thomas: 1905 (nr. 3093).

Nectria vulgaris Speg. Fung. Arg. pug. IV, nr. 198.

St. Croix: Jolly Hill 5. 1. 06 (nr. 1725).

Nectria sp.

Unripe specimens.

St. Jan: Cruz Bay 14. 2. 06 (nr. 1752).

Sphaerostilbe intermedia Ferd. et Wge. sp. n. Pl. I, fig. 5.

Stromate substrato adnato vel margine libero, pedes conidiophororum cingente iisque connato, convexo subplanove, hypocreoideo, 2—6 mm. diam., in sicco pallide carneo vel luteo-albo, ostiolis peritheciorum aurantiaco-papillato, humefacto subcinnabarino. Peritheciis stromate immersis, ostiolis obtuso-conicis erumpentibus, ovoideo-subglobosis, $170—200 \mu$ diam. Ascis linearo-cylindraceis, apice rotundatis, $70—85 \mu \times 5^1/_2—7^1/_2 \mu$, subsessilibus. Sporidiis octonis, monostichis, ellipsoideis, utrinque rotundatis, nonnunquam levissime inaequilateralibus, episporio subtiliter granuloso, 1-septatis, ad septum non vel vix constrictis, $10^1/_2—12^1/_2 \mu \times 4^1/_2—5^1/_2 \mu$, flavidulis. (Sub ejaculationem sporarum asci valde elongantur, et sporae altera ab altera removentur). Conidiophoris stromati concoloribus, ad typum *Stilbi* formatis, pedicello usque 1 mm. long.; capitulo subgloboso $400—600 \mu$ diam. Conidiis ellipsoideis vel oblongo-ellipsoideis, $4—8 \mu \times 2 \mu$, hyalinis.

Species *S. hypocreoidi* Kalchbr. et Cke. et *S. hypocreoidi* P. Henn. (quae species in posterum melius *S. Henningsii* appelletur) affinis, iisque quasi intermedia.

Ad corticem arborum in insula St. Thomas Indiae occidentalis (Leg. Raunkiær).

In Grevillea IX p. 26 (t. 36 fig. 25) Kalchbrenner and Cooke have described and pictured a *Sphaerostilbe* with Hypocrea-like stroma because of which they have called it *S. hypocreoides*. To this fungus the species here described is evidently related; our spores however are more slender and less granulated (*S. hypocreoides*: sp. $10—12 \times 7 \mu$, cfr. the drawing l. c.) and the conidia are more varying in length (*S. hypocreoides*: con. $5 \times 2 \mu$). On the other hand *S. intermedia*, here described, has some resemblance with the South-American *S. hypocreoides* P. Henn. (Fung. Blumenav., Hedw. 1902, p. 4), for which species we propose the name *S. Henningsii* as the species-name *hypocreoides* is

used by Kalchbrenner and Cooke for another *Sphaerostilbe* (vide supra). The differences between *S. intermedia* and *S. Henningsii* are to be found especially on the following points.

S. Henningsii nobis.		*S. intermedia sp. n.*
1—2 mm. diam.	Stroma	2—6 mm. diam.
150—180 μ diam.	Capit. conidiophori . . .	400—600 μ diam.
Cylindr.-clavat., 65—75 μ long., p. sp. 50—60 μ.	Asci	linearo-cylindr. 70—85 μ long., subsessiles.
leves	Sporae	subtiliter granulatae.
8—10 μ × 4—5 μ	Conidia	4—8 μ × 2 μ.

St. Jan: Caroline 5. 3. 06 (nr. 3105); West End 14. 2. 06 (nr. 3121).

St. Thomas: Crown 1905 (nr. 1697); Løvenlund 17. 12. 05 (nr. 3074, nr. 3078).

The fungus grew in all localities together with *Stilbum Karstenii* Sacc.

Sphaeriaceae.

Daldinia Eschscholzii (Ehrenb.) Rehm, Ann. Myc. 1904.

Our Westindian *Daldinia*-material belongs to this species, originally regarded as a *Daldinia concentrica*-variety. The species *Eschscholzii* is characteristic by a copper-coloured pruina and a more spongious interior; the spores are also somewhat smaller. Rehm states the spores to be 10—12 μ × 5 μ. Such constancy in spore-breadth did not occur in our rather rich material; we found the length always being about 12 μ, while the breadth was between $5^1/_2$—$6^3/_4$ μ.

As Rehm about the asci only states: "ascis cylindraceis, subevanidis" and as in a single case (nr. 3079) we found many good asci, we are giving a diagnose of them as follows:

Ascis cylindraceis, 70—75 μ × $7^1/_2$—10 μ p. sp., in pedicellum tenuissimum, flexilem, 20—25 μ long. attenuatis, sporidia octona, superne subtransverse, inferne subrecte monosticha foventibus.

The length of the spore-bearing portion of the ascus is very constant and not so great as by *D. concentrica*.

St. Croix: Jolly Hill 12. 1. 06 (nr. 1711 a); South-west 8. 1. 06 (nr. 1726).

St. Jan: America Hill 17. 3. 06 (nr. 1784); Caroline 12. 3. 06 (nr. 1730); Coral Bay 4. 3. 06 (nr. 1691), 5. 3. 06 (nr. 1746); Cruz Bay 17. 2. 06 (nr. 1758).

St. Thomas: Crown Dec. 1905 (nr. 3079); Løvenlund 6. 11. 05 (nr. 1698 b), 2. 12. 05 (nr. 1727), 14. 12. 05 (nr. 1696), 17. 12. 05 (nr. 1705).

Eutypa aurantiicola Speg. Fungi Guaran. II, nr. 65.

Our specimens are quite in accordance with Spegazzini's detailed description, the perithecia only being on an average somewhat larger. This deviation surely arises from the different substrata (Spegazzinis specimens were found upon naked roots of *Citrus Aurantium*). *Eutypa comosa* Speg. is closely related to this species and *E. micromeria* (Mont.) Sacc. seems after the description hardly to be different. — On stumps of wood.

St. Thomas: Crown 1. 12. 05 (nr. 3110).

St. Jan: Debt 10. 3. 06 (nr. 1653, nr. 3106).

Eutypa flavovirescens (Hoffm.) Tul. var. *multiceps* Sow. Engl. Fung. III, t. 394.

By this variety that also occurs in Denmark the stroma forms no extended coherent crust but is as broken into small separated stumps. In some elder specimens the yellowish-green colour otherwise characteristic for the interior of the fungus had gone through to the surface so far that the stroma had also outwardly a dirty-green tinge. — On stumps of wood.

St. Jan: Cruz Bay 14. 2. 06 (nr. 1750, nr. 1753).

Hypoxylon (Placoxylon) St. Janianum Ferd. et Wge. sp. n. Pl. I, fig. 6.

Stromate superficiali, repando (fragm. examin. 5 cm. et ultra long., 3 cm. lat.), $^1/_2$ cm. alto, hinc inde obsolete rimoso, margine undulato-tumidulo, irregulariter, distincte vero limitato, intus fuligineo-fusco, extus crusta ferruginea, ostiolis peritheciorum obscurioribus punctata, tecto, strato subperitheciali fibroso, textura fere daldiniacea, instructo. Crusta obtegenti externe modo ferruginea, interne autem vivide rubra, inter perithecia singula $\pm$ profunde penetrante. Peritheciis monostichis, densissime stipatis, tubulatis, usque $1^3/_4$ mm. long., $^1/_3$ mm. crass. Ostiolis levibus, crateriformiter pertusis, crusta obscurioribus eamque papillatim penetrantibus. Ascis (perpaucis fragmentis visis) cylindraceis? Sporidiis ellipsoideo-subnavicularibus, utrinque rotundatis, e latere leviter compressis, $14^1/_2$—$19\,\mu \times 7$—$8^1/_2\,\mu$, pluriguttulatis, atro-fuscis.

Species *Hypoxylo (Penzigiae?) areolato* Starb. affinis, cui speciei nomen *Hypoxylon Starbæckii* proponimus, quum *H. areolatum* exstet anterius (B. et C. Cub. Fung. nr. 824).

In insula St. Jan Indiae occidentalis. (Leg. Raunkiær).

The species here described and its relatives seem to come near the limit of the genus *Hypoxylon*.

Hypoxylon rubiginosum Fr. Summ. Veg. Scand. p. 384.

St. Croix: Caledonia Valley 2. 2. 06 (nr. 1760); Prosperity Garden (nr. 1707).

St. Jan: America Hill 17. 3. 06 (nr. 1735), 19. 3. 06 (nr. 1737); Caroline 26. 2. 06 (nr. 1732); Cruz Bay 14. 2. 06 (nr. 1757); Debt 10. 3. 06 (nr. 1728).

St. Thomas: Crown 1. 12. 05 (nr. 1687, nr. 1701, nr. 1702); Løvenlund 6. 11. 05 (nr. 1698 c).

Hypoxylon pseudopachyloma Speg. F. Fueg. nr. 191.

Spores 11—13 μ × 5—7 μ.

St. Croix: Cresquis 4. 1. 06 (nr. 1722).

St. Jan: Cruz Bay 14. 2. 06 (nr. 1748).

St. Thomas: Crown 1905 (nr. 1697), 1. 12. 05 (nr. 1702).

Nummularia Bulliardi Tul. Select. Fung. Carp. II, p. 43.

St. Jan: Cruz Bay 15. 2. 06 (nr. 1751).

St. Thomas: Crown 1. 12. 05 (nr. 1706); Løvenlund 6. 11. 05 (nr. 1698 a).

Local. unknown: (nr. 1704).

Nummularia cincta Ferd. et Wge. sp. n. Pl. II, fig. 1.

Stromate per corticem erumpente ejusque laciniis erectis arcte cincto, pulvinato vel placentiformi, margine angusto, tumidulo, circuitu orbiculari vel parum elongato, 2—6 cm. (et ultra?) diam., 2—15 mm. crass., fusco, intus concolori, textura subcoriacea. Peritheciis periphericis, monostichis, dense stipatis, cylindraceis vel subovoideis, circ. 1 mm. × 1/5—1/2 mm.; ostiolis minutissimis, oculo nudo vix conspicuis, discoideo-papillulatis, poro lato pertusis, in speciminibus vetustis obliteratis. — Ascis linearo-cylindraceis, apice rotundatis, in pedicellum longissimum, fragilem leniter attenuatis, p. sp. 95—105 μ × 6—7 μ, poro jodo coerulescente. Sporis octonis, monostichis, ellipsoideis vel ellipsoideo-fusiformibus, verrucosis, 13—15 μ × 5—6 1/2 μ, singulatim brunneolo-tinctis, gregatim brunneis. Paraphysibus validis, septatis, basi circ. 6 μ crass., sursum leniter attenuatis, ascos longe superantibus.

Ad ramos corticatos in insulis Hispaniola et St. Jan Indiae occidentalis. (Leg. Raunkiær).

St. Jan: Bordeaux 27. 2. 06 (nr. 1715); Debt 10. 3. 06 (nr. 1747).

Nummularia dura Ferd. et Wge. sp. n. Pl. II, fig. 2.

Stromate per corticem erumpente, plano, supra superficiem corticis vix surgente, margine sterili, tecto, ambitu fere orbiculari, 1 1/2—3 cent. (et ultra?) diam., tenuissimo, intus extusque nigerrimo, glabro, foveolis irregulariter dispersis circ. 2—3 mm. diam. instructo, textura carbonacea, durissima, picem aridam in memoriam revocante. Peritheciis monostichis, densissime constipatis, tubulatis, 3/4—1 mm. long., circ. 1/5 mm. crass. Ostiolis pustuliformibus, minutissimis, lente sola conspicuis. Ascis cylindraceis, apice rotundatis jodoque coerulescentibus, breviter pedicellatis, p.

sp. 125—135 $\mu \times 7^1/_2$—8 μ. Sporis octonis, monostichis, e dorso oblongo-ellipsoideis vel ellipsoideo-fusoideis, e latere inæquilateralibus vel navicularibus, nonnullis subcurvatis, 18—22 $\mu \times 6^1/_2—7^1/_2$ μ, pellucido-fuscidulis. Paraphysibus filiformibus, longis, sursum attenuatis, guttulatis.

Ad lignum corticatum arborum in insulis St. Croix et St. Thomas Indiae occidentalis. (Leg. Raunkiær).

St. Croix: Jolly Hill, 28. 12. 05 (nr. 1765).

St. Thomas: Løvenlund, 6. 12. 05 (nr. 1685).

Rosellinia metachroa Ferd. et Wge. sp. n. Pl. II, fig. 3.

Subiculo nullo. Peritheciis matrice inquinata insidentibus, superficialibus, dense gregariis saepeque in plagulas subeffusas confluentibus, globosis, usque $^3/_4$ mm. diam., pruina primo rubro-fusca, deinde cinereo-glauca, persistenti obtectis, superne nudis, atro-fuscis, subpapillatis, poro vix visibili perforatis. Ascis lineariter cylindraceis, poro jodi ope coerulescente, in pedicellum longum leniter attenuatis, 135—170 (p. sporif. 75—100) $\mu \times 6^1/_2$—8 μ. Sporidiis octonis, monostichis, oblongo-ellipsoideis, e latere visis utrinque acutiuscule rotundatis, subnavicularibus, 13—16 $\mu \times 5^1/_2—6^3/_4$ μ, 2- —pluriguttulatis, atro-fuscis. Paraphysibus filiformibus, longis, 2—4 μ crass., apice jodo coerulescentibus.

Ad lignum corticatum vel nudum in insulis St. Croix et St. Jan Indiae occidentalis. (Leg. Raunkiær).

Species *R. cinereo-violascentem* Starbäck characteribus multis mire aemulans, absentia autem tota subiculi, pruina primo rubro-fusca, dein cinereo-glauca, persistenti et habitu non stromatico satis, ut videtur, distincta.

St. Croix: Mount Stewart 3. 1. 06 (nr. 1724).

St. Jan: America Hill 17. 3. 06 (nr. 1740); Cruz Bay 14. 2. 06 (nr. 1756).

Rosellinia St. Cruciana Ferd. et Wge. sp. n. Pl. II, fig. 4.

Peritheciis subiculo nullo, sulcis internervalibus petioli insidentibus, superficialibus, subglobosis, papillula semigloboso-conoidea, brevi, nitenti (nonnumquam disculo insidente) praeditis, $^1/_2—^3/_4$ mm. diam., ferrugineo-pruinosis, atro-fuscis. — Ascis anguste clavatis, superne rotundatis, in pedicellum longum leniter attenuatis, obturaculo jodi ope intense coerulescente, 150—200 μ (p. sporif. 80—110 μ) $\times$ 10—13 μ. Sporis irregulariter monostichis subdistichisve, octonis, oblongo-ellipsoïdeis, subnavicularibus, obtusulis vel breviter acutatis, tunica mucosa anguste adjacente, utrinque appendiculam saccato-subglobosam, hyalinam, 3—5 μ crass. formante, indutis, 16—20 $\mu \times 6—7^1/_2$ μ, 2—4-guttulatis, atro-castaneis. — Paraphysibus filiformibus, septatis, 3 μ crass., ascos superantibus, evanescentibus.

Ad petiolum siccum *Cocoës nuciferae* in insula St. Croix Indiae occidentalis. (Leg. Raunkiær).

St. Croix: Jolly Hill 22. 1. 06 (nr. 1761).

Rosellinia subiculata (Schwein.) Sacc. Schw. Car. nr. 175.

Characteristic by its light sulphure-yellow subiculum. — As the description of this species by Saccardo (Sylloge Fung. I, nr. 925) is rather incomplete, especially as to the microscopical characters, we are here giving a more detailed diagnose from our rather rich collection:

Peritheciis globoso-mammoideis, $^3/_4$—1 mm. diam., atris, levibus, superne papillo conico minuto, basi subiculo pallide sulphureo, series elongatas formante, cinctis, plerumque ligno insculptis. Ascis lineariter cylindraceis, in pedicellum 10—30 μ long. attenuatis, 65—80 (p. sporif.) μ $\times$ $7^1/_2$—10 μ. Sporidiis oblique monostichis, ellipsoideo-ovoideis, inaequilateralibus, utrinque rotundatis, plerisque 14—15 μ $\times$ $7^1/_2$ μ, juvenilibus biguttulatis, fuscis, maturis impellucidis, atris. Paraphysibus filiformibus, valde numerosis, hyalinis, 3—5 μ crass., apicem versus angustioribus, obsolete septatis, ascis fere duplo longioribus. — Ad lignum decorticatum.

St. Croix: Jolly Hill 31. 12. 05 (nr. 3112), 22. 1. 06 (nr. 1759); Mount Stewart 3. 1. 06 (nr. 1717).

St. Jan: Cruz Bay 14. 2. 06 (nr. 1749, nr. 1754).

Sporormia intermedia Auersw. Hedw. 1868 vol. VII, p. 67. — On donkey-dung together with *Ascophanus carneus* (Pers.) Boud.

St. Thomas: Løvenlund 17. 12. 05 (nr. 3102).

Stigmatea Piperis Rehm Hedw. 1901 p. 105. — On leaves of *Piper medium*.

St. Jan: Caroline 12. 3. 06 (nr. 1784).

Locality unknown: (nr. 2618).

Xylaria (Xyloglossa) appendiculata Ferd. et Wge. sp. n. Pl. II, fig. 5.

Stromatibus nunc hypoxyloïdeis, subglobosis, nunc clavatis, stipitatis. Clavulis rugosis, ostiolis peritheciorum exasperatis, long. (specim. maxim.) 3 mm., crass. fere 1 mm., fusco-nigris, intus niveis, deorsum in stipitem primo albo-farinosam, mox nudum, longitudinaliter striatum, clavulae fere colore et longitudine leniter attenuatis. Peritheciis remotis, globosis, circ. 200 μ diam., ostiolis semiglobosis vel subconicis, magnis prominentibus. Ascis cylindraceis, apice rotundatis, poro jodi ope intense coerulescente, in stipitem leniter attenuatis, 105—115 μ (p. sp. 80—87 μ) $\times$ $7^1/_2$—$8^3/_4$ μ. Sporis monostichis, octonis (rarissime quaternis, 14 μ long.) coffeiformibus, 11—$12^1/_2$ μ $\times$ $6^1/_2$—7 μ, 2-guttulatis, fuscis, muco tenui indutis, utrinque appendicula obtuse conica, hyalina, 2—3 μ long.,

instructis. Paraphysibus filiformibus, septatis. — Species mensuris microscopicis valde constans.

Ad folia sicca *Crescentiae cucurbitinae* (?) in insula St. Croix Indiae occidentalis (Leg. Raunkiær).

St. Croix: Caledonia Valley 2. 2. 06 (nr. 1780).

Xylaria (Xyloglossa) lignosa Ferd. et Wge. sp. n. Pl. II, fig. 6.

Stromate grosse clavato, compresso, subcurvato, leviter torto, solido, lignoso, apice obtuso, postice in stipitem crassum, brevissimum, glabrum, clavae concolorem sensim attenuato, extus ruguloso, fusco, ex ostiolis peritheciorum nigro-papillato, intus ex argillaceo fumoso, long. (specim. maxim. examinat.) circ. 11 cm., crass. 4 × 2 cm. Peritheciis dense stipatis, late ellipsoideis, $^3/_4$—1 mm. × $^1/_2$—$^3/_4$ mm. Ostiolis papilliformibus, nigris, subnitentibus, poro minuto pertusis. Ascis plurimis jam resorptis, paucis evanescentibus visis, poro jodi ope coerulescente. — Sporis e dorso elongato-ellipsoideis, e latere navicularibus, utrinque rotundatis, guttulatis, 14—18 μ × 6—7$^1/_2$ μ, maturis atris.

Ad truncos in insula St. Croix Indiae occidentalis. (Leg. Raunkiær).

St. Croix: Jolly Hill 2. 1. 06 (nr. 1711 b).

Xylaria (Xyloglossa) sessilis Ferd. et Wge. sp. n. Pl. II, fig. 7.

Clavulis ellipsoideo-cylindraceis, basi subito constrictis, sessilibus, textura carbonacea intusque denique cavis, 3—4 mm. long., 2 mm. crass., rugosis, fuscis. Peritheciis globosis, circ. $^1/_2$ mm. diam., ostiolis papilliformibus, minutissimis, sub lente etiam aegre conspicuis, prominentibus. Ascis cylindraceis, juvenilibus apice usque 7 μ incrassatis, truncatis, poro jodi ope coerulescente, in stipitem longissimum leniter attenuatis, paraphysatis, maturis evanescentibus, p. sp. 80—100 μ × 6—7 μ. Sporis monostichis, e dorso ellipsoideis vel oblongo-ellipsoideis, nonnumquam ovatis, e latere inaequilaterali-subnavicularibus, sæpeque curvulis, 11—15 μ long. (vel paucis ultra) × 5—6 μ crass., 2-guttulatis, fuscis.

Ad ramulum corticatum in insula St. Thomas Indiae occidentalis. (Leg. Raunkiær).

St. Thomas: 1905 (nr. 3100).

Xylaria subtorulosa Speg. F. Puigg. nr. 269.

Identic with this species or at least nearly related to it is a single young specimen of a *Xylaria* from

St. Thomas: Crown 1. 12. 05 (nr. 1688).

Xylaria subtrachelina P. Henn. Fungi St. Paulenses III, p. 207.

A rich material of this species enables us to make some additions to the species-diagnose l. c. — The stromata are not always single but here and there caespitous and then they have a much developed brownish felt at the base. Sometimes the clavula is two-parted. Beneath the fertile

cortex lies a peculiar white-yellowish tissue, composed of transversal fibres and inwardly fixed to a tough, dark axile string which as a rule will keep unbroken when the clavula is broken. The asci are very long-stalked, the length of the pedicel in a single case reaching 90 μ; most of the stalks however seem much shorter because they are fragile and will easily break. — On brittled wood.

St. Croix: Jolly Hill 25. 1. 06 (nr. 1710).

Dothideaceae.

Phyllachora conspicua Ferd. et Wge. sp. n. Pl. II, fig. 8.

Stromatibus matrici innatis, primo $\pm$ orbicularibus, minutis, discretis, mox autem dense aggregatis irregulariterque confluentibus vel crustam conspicuam, usque $1^1/_2$ cent. diametro formantibus, atris, initio epiphyllis, dein amphigenis, maculis orbicularibus flavis insidentibus easque paene explentibus. Loculis globosis, subglobosis applanatisve, 150—180 μ diam., mesophyllo immersis, ostiolis longis, non prominulis praeditis. Ascis cito diffluentibus, cylindraceis, cylindraceo-subfusoideis vel oblongo-ellipsoideis, apice obtuse rotundatis, postice pedicello brevi et tenui, 80—115 $\mu \times$ 15—18 μ. Sporis octonis, oblique monostichis vel subdistichis (in ascis subellipsoideis fere conglobatis), oblongo-ellipsoideis, utrinque rotundatis, 19—22 $\mu \times 6^1/_2$—8 μ, continuis, hyalinis, oleoso-farctis. — Paraphysibus filiformibus.

Ad folia viva *Jacquiniae armillaris* ad Coral Bay in insula St. Jan Indiae occidentalis. (Leg. Raunkiær).

St. Jan: Coral Bay 2. 3. 06 (nr. 2666).

Phyllachora Cyperi Rehm in Thuem. Contr. Myc. Lus. p. 282. — On *Scleria sp.*

St. Jan: Makumbi 20. 2. 06 (nr. 1766).

Phyllachora graminis Fckl. Symb. Myc. p. 216. — On *Panicum insulare* (or *maximum*).

St. Thomas: Lovenlund Dec. 05 (nr. 1767).

Phyllachora Randiae Rehm Hedw. 1897 p. 371 subsp. *aculeatae* Ferd. et Wge. subsp. n.

Ascis cylindraceo-obovoideis, clavatis, ovoideis, omnino versiformibus, 40—60 $\mu \times$ 15—20 μ. Sporis oblongo-ellipsoideis, 12—13 $\mu \times$ 7—8 μ. Ceteris typi.

Ad folia viva *Randiae aculeatae* in insula St. Jan Indiae occidentalis. (Leg. Raunkiær).

St. Jan: Bordeaux 27. 2. 06 (nr. 1742).

Sphaeropsidaceae.

Cicinnobolus.

On different Oidia (4 different host-plants) we have found Cicinnobolus pycnidia. These were on an average 50—70 μ in length, while the breadth was much varying according to their more or less lengthened shape. The spores which appeared in long cirrhi (for instance 400 μ × 25 μ) were of a constant form and size (7—7½ μ × 2½—3 μ). Hence the forms in question differ much from *C. Cesatii* De By., common everywhere in Europe on *Oidium erysiphoides* and *O. Tuckeri* (pycn. 25—35 μ long, sp. 2½—3 μ × 1 μ), and cannot belong to this species. As, however, the other *Cicinnobolus*-species are bound to special *Oidium*-forms (on special host-plants), and our host-oidia are not to be more closely determined, it would be objectionable to bring together these American forms with known European ones. On the other hand it will be wrong to create one or more new species only on scattered preparative findings, especially when the question is of a still mysterious and disputed organism as *Cicinnobolus.*

In Sylloge Fungorum *Cicinnobolus* is not at all stated from America; Farlow and Seymour (A provisional host-index of the Fungi of the United States) speak of *Cicinnobolus Cesatii* De By. on "various Erysibaceae".

St. Croix: Jolly Hill 30. 12. 05 (nr. 1673 on *Sida sp.*), 1. 1. 06 (nr. 1681 on *Crotalaria retusa*, nr. 1682 on *Priva lappulacea*); La Grange 30. 12. 05 (nr. 1674 on *Cassia sp.*).

St. Jan: Cruz Bay 12. 2. 06 (nr. 1677 on *Sida sp.*).

Darluca Filum (Biv.) Cast. Cat. Pl. Marseill. Sup. p. 53. — Parasitic on Uredineae.

St. Croix: Jolly Hill 31. 12. 05 (nr. 1818 on *Puccinia Synedrellae*).

St. Thomas: Løvenlund 7. 12. 05 (nr. 1829 on *Puccinia Synedrellae*), Dec. 1905 (nr. 1802 on *Puccinia Commelinae*).

Melophia Eugeniae Ferd. et Wge. sp. n. Pl. II, fig. 9.

Stromatibus epiphyllis, innatis, applanato-convexulis, orbicularibus, rugulosis, usque 4 mm. diam., aterrimis, nitidis, zonula angusta rufobrunnea cinctis, in hypophyllo maculas convexo-depressas, dilute brunneas formantibus. Loculis in stromate singulo pluribus, immersis, applanatis, magnitudine varia, inferne strato nigrefacto limitatis, superne epidermidem convexam levantibus, nondum apertis. Conidiis allantoideo-filiformibus, falcatis, nonnullis vermiformibus, 6—13 μ × 1—1½ μ, hyalinis.

Ad folia viva *Eugeniae sp.* in insula St. Thomas Indiae occidentalis. (Leg. Raunkiær).

St. Thomas: Løvenlund 10. 5. 06 (nr. 1678).

Pseudodiplodia Xylariae Ferd. et Wge. sp. n. Pl. II, fig. 10.

Pycnidiis superficialibus dense gregariis, globosis, subconico-protractis, nonnumquam applanatis, formaque *Roselliniam thelenam* in memoriam revocantibus, membranaceis, 100—125 μ diam., luteis. Peridio stratis circ. 5 minute-cellularibus composito, intimo conidiifero, ideoque conidiophoris nullis. Conidiis oblongis, apice rotundatis vel ellipsoideo-subfusiformibus, nonnumquam varie irregularibus, maturis 1-septatis, ad septum saepius leniter constrictis, guttulis 2—4 oleosis farctis, $6^1/_2—8 \asymp 2^1/_4—3^1/_4 \mu$, paucis superantibus, hyalinis. — Habitu primo obtuito fere *Eurotii*.

Ad clavulas *Xylariae sp.* in insula St. Jan Indiae occidentalis. (Leg. Raunkiær).

Alfred Møller remarks[1]) on Didymosporae Hypocreacearum: "Saccardo's weitere Theilung dieser Formen in Hyalodidymae und Phaeodidymae bleibt zweckmässig ganz ohne Berücksichtigung. Denn die ersteren sollen „sporidia hyalina vel olivascentia“ und die anderen "sporidia fuscescentia“ haben; aber schon in der Gattung *Nectria* finden sich die verschiedensten Farbenabstufungen".

The genus *Pseudodiplodia*, that surely is a conidial stage of a fungus of the family Hypocreaceae, most likely of *Nectria*, shows as to the spore-colour nearly the same character as this last named genus. The spore-colour is namely here going from hyaline over olive to "fuscus" (*P. atrofusca* (Schwein) Starb.). On account of this it is misleading, when Lindau (in Engler und Prantl: Natürliche Pflanzenfamilien I, 1** p. 385) classes *Pseudodiplodia* among (Nectrioideae-Zythieae-)Phaeodidymae. After analogy from *Nectria* and owing to the supernumerary of the light-spored species it would be better to class the genus under Hyalodidymae; most correct it would be to place it under a group (Nectrioideae-Zythieae-)Didymosporae quite without reckoning with the colour of the spores.

St. Jan: America Hill 17. 3. 06 (nr. 1731).

Hyphomyceteae.

Chromosporium formicarum Ferd. et Wge. sp. n. Pl. II, fig. 11.

Mycelio lignum cariosum penetrante, tenuissimo; conidiis in ramulis curtis acrogenis, pedicello hyalino secedentibus, globosis, guttulis oleosis 1—3 (plerumque 1) repletis, 6—9 μ diam., sub vitro aurantiaco-pellucidis, superficiem ligni pulvere luteo-ochraceo obducentibus. — Species habitatione praedistincta, cavernas a formicis in ligno carioso fossas totum obtegens, ibique solum, non extra crescens. (Teste cl. Raunkiær).

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[1]) Phycomyceten und Ascomyceten p. 82 (Schimper: Botanische Mittheilungen aus den Tropen, Heft 9).

In insula St. Jan Indiae occidentalis. (Leg. Raunkiær).

The fungus above described was found in a brittled trunk, occupied by ants, and on the label is written: "Ant-nest with fungus-culture on the walls of the walks". In reality there is good cause to presume that this fungus is cultivated by the ants. According to Raunkiær's observation all the ant-walks in the wood were covered all over with the brown-yellow layer of conidia and outside the walks the fungus was not to be seen. This does not prove, however, that the fungus is cultivated which only becomes evident when we are comparing the case with Alfred Møller's investigations on the relation of certain ant-species to fungi[1]). His examinations prove that some ants (of the genus *Atta* a. o.) know how to cultivate certain species of fungi and how to carry on the cultivation in quite a definite direction. Besides this they know how to weed the culture of all weeds consisting of foreign mycelium, bacteria and the like, consequently they are making these "fungus-gardens" models of pure-cultures. Furthermore Møller's experiments have proved that fungus-cultivating ants are eating nothing but their own fungus and have such a love of this food, that only on the point of starving they will try some other food.

Comparing our here mentioned finding with these experiences it seems at hand to suppose that the ants, when they are putting up with the fungus, are finding their account in it. — We are to suppose that the conidia of the fungus that are so to speak stuffed with oil are to the ants a good article of food. (Compare the oilrich "Kohlrabihäufchen" in the South-American ant-species' fungus-gardens).

St. Jan: America Hill 19. 3. 06 (nr. 1782).

Chromosporium pachyderma Ferd. et Wge. sp. n. Pl. II, fig. 12.

Conidiis globosis, subglobosis angulatisve, episporio usque 4 μ incrassato, 15—20 μ diam., viridi-pellucidis, supra lignum decorticatum crustam tenuem, aerugineam, late effusam formantibus. Mycelio parcissimo, conidiophoris nullis.

Ad lignum decorticatum in insula St. Croix Indiae occidentalis.

St. Croix: Cresquis 4. 1. 06 (nr. 1639); Jolly Hill 16. 1. 06 (nr. 1647).

Fumago vagans Pers. Myc. Eur. I, p. 9.

This fungus appears, at it seems, often in The Danish West Indies on many different plants; most richly developed we found it on *Mangifera indica*, but just here it was also noted that the trees in question were "infested with plant-lice in the top". We have noted all the known forms of fructification of the fungus with the exception of simple conidi-

[1]) Alfred Møller: Die Pilzgärten einiger südamerikanischen Ameisen in: Schimper: Mittheilungen aus den Tropen.

ophores (in other words: long and short pycnidia, coremia, chlamydospores and in a few cases perithecia: nr. 1656 perithecia without contents, nr. 1768 *Capnodium sp.*).

St. Croix: Jolly Hill 20. 12. 05 (nr. 3115 on *Wedelia buphthalmoides*), 26. 12. 05 (nr. 1671 on the same plant).

St. Jan: Coral Bay (Vrieses Bay) 13. 3. 06 (nr. 1770 a on *Cordia sp.?*, nr. 1770 b on *Croton sp.*, nr. 1770 c on *Elaeodendron xylocarpum*).

St. Thomas: Crown 9. 5. 06 (nr. 1762 on *Piper medium*); Løvenlund Dec. 05 (nr. 1768 on *Mangifera indica*).

Locality: unknown (nr. 1656 on *Mangifera indica*).

Heterosporium repandum Ferd. et Wge. sp. n. Pl. II, fig. 13.

Caespitulis singulis dense gregatis, intricato-confluentibus, indeque faciem mycelii ramulos late obtegentis praebentibus, atris. Conidiophoris simplicibus vel parce ramosis, septatis, incremento sympodiali flexuosis, usque $250\,\mu$ long. $\times$ $5-6\,\mu$ crass., fuligineo-fuscis. Conidiis cylindricis, utrinque rotundatis, constanter 3-septatis, ad septa non constrictis, $21-28\,\mu \times 5^1/_2-7\,\mu$, paucissimis paululum infra ultrave, nonnumquam guttulatis, fuligineis, distincte verrucosis.

Ad ramulos siccos indeterm. in insula St. Thomas Indiae occidentalis (Leg. Raunkiær).

St. Thomas: Løvenlund 16. 12. 05 (nr. 1658).

Oidium Cyparissiae Syd. Hedw. 1897 p. 163.

St. Croix: La Grange 30. 12. 05 (nr. 1672 on *Euphorbia sp.*, nr. 3068 on *Euphorbia pilulifera* (?)).

St. Thomas: Løvenlund 14. 12. 05 (nr. 1676 on *Euphorbia sp.*).

Oidium.

On many host-plants we have found indeterminable remainders of oidium-chains and mycelium being constantly without perithecia. As a rule the measures were the same as said for *Oidium erysiphoides* Fr.

St. Croix: Jolly Hill 1. 1. 06 (nr. 1680 on *Phaseolus semierectus*, nr. 1681 on *Crotalaria retusa*, nr. 1682 on *Priva lappulacea*), 3. 1. 06 (nr. 1675 on *Cosmos sp.*), 17. 1. 06 (nr. 1843 on *Rhynchosia minima*), 23. 1. 06 (nr. 3082 on *Elephantopus spicatus*); La Grange 30. 12. 05 (nr. 1674 on *Cassia sp.*).

Periconia atra Cda. Ic. 1, p. 19. — On *Saccharum officinarum*.

St. Croix: La Grange 5. 1. 06 (nr. 1659).

Physospora rubiginosa Fr. Summ. Veg. Scand. p. 495. — On bark.

St. Jan: America Hill 17. 3. 06 (nr. 3020); Caroline 12. 3. 06 (nr. 1640); Coral Bay 12. 3. 06 (nr. 2931).

Pucciniopsis Caricae Earle. Bull. New York Bot. Gard. 1902 p. 340. — Vide Pl. II, fig. 14.

The very rich material of this fungus has made it possible to give some additions to the diagnose of this species (l. c.) made after the last stage of the development of the fungus (compare: "On decaying leaves of *Carica Papaya*"). — On the green leaves the infection is very conspicuous because they are speckled with plenty of until 3 mm. broad spots which are glaring yellow-white, especially on the over-side, while on the under-side they will soon be filled by the outbreaking sporodochia. These are from the beginning brown-yellow, ceraceous, but by and by they are always becoming brown-black. The spores from our specimens were as a rule one-celled, and many of these were seen germinating with until 3 germinative hyphae (see the figure!). Hence cross-walls are not always to be found. In our specimens they were upon the whole rare and indistinct. After this *Pucciniopsis Caricae* is very closely related to the genus *Epidochium* Fr. — The longest spores were measured to 27 μ.

St. Thomas: Løvenlund 10. 5. 06 (nr. 1787).

Stilbum (Stilbella Lindau) *Heveae* (Zimmerm.) Sacc. et P. Sacc. Bull. Inst. bot. Buitz. 1901 p. 21. This pretty hyphomycetous fungus with a shining ruby-coloured base is described from Buitenzorg, Java, found on *Hevea brasiliensis*. As all characters exactly agree and the fungus is upon the whole very characteristic there is — even if our specimens reached until 2 mm. in height (while about 1 mm. for the Javanian) — no doubt about the species-identity of the two forms. — On stumps of wood.

St. Thomas: Crown 1. 12. 05 (nr. 3080).

Stilbum (Stilbella Lindau) *Karstenii* Sacc. Karsten in Hedw. 1889 (sub. nom. *St. nigripes*). Conidiophores most single, sometimes bifurcated. — Together with *Sphaerostilbe intermedia* nobis on all finding-places.

St. Jan: Caroline 5. 3. 06 (nr. 3105).

St. Thomas: Crown 1905 (nr. 1697); Løvenlund 17. 12. 05 (nr. 3074, nr. 3078).

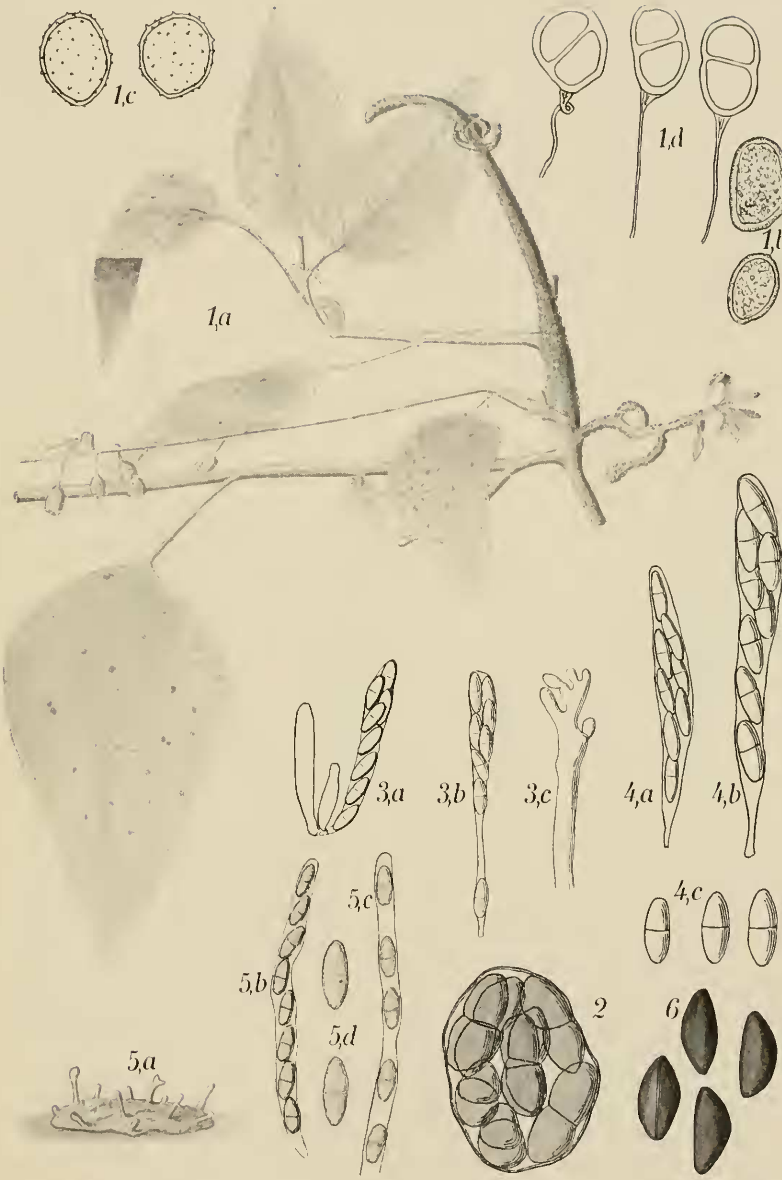
Trichoderma lignorum Harz. Einig. Hyph. p. 29.

St. Croix: Mount Stewart 16. 1. 06 (nr. 1660 on *Poria sp.*).

St. Jan: Debt 10. 3. 06 (nr. 1642 on wood).

Tuberculina persicina (Dittm.) Sacc. Fl. ital. t. 964. — Parasitic on *Puccinia Raunkiœrii* nobis, especially in the aecidia, that will get transformed into purple-coloured sclerotium-like bodies, but also in the uredo- and teleutospore-heaps.

St. Thomas: Løvenlund Dec. 05 (nr. 1832), 10. 5. 06 (nr. 1819, nr. 3066).



O. Winge del.

1. Puccinia Raunkiærii. 2. Asterina Coccolobae. 3. Nectria grammicospora. 4. Nectria setosa. 5. Sphaerostilbe intermedia. 6. Hypoxylon St. Janianum.